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(54) Title: THERMAL INSULATION STRUCTURES COMPRISING LAYERS OF EXPANDED GRAPHITE PARTICLES COMPRESSED TO DIFFERENT DENSITIES AND THERMAL INSULATION ELEMENTS MADE FROM THESE STRUCTURES

(57) Abstract: Thermal insulation structure comprising at least one flexible layer based on compressed expanded graphite particles characterised in that the density of the said flexible layer is equal to at least 0.4 g/cm³ (400 kg/m³) and in that the said thermal insulation structure also comprises another layer close to the said flexible layer based on compressed graphite particles with a lower density, typically less than 0.4 g/cm³ (400 kg/m³). Preferably, the dense compressed expanded graphite layer has a density of between 0.5 and 1.6 g/cm³ (500 and 1600 kg/m³) and the said sub-dense compressed expanded graphite layer has a density of between 0.05 and 0.3 g/cm³ (50 and 300 kg/m³). Thermal insulation elements are also described that are designed to be fitted on furnaces operating under non-oxidising atmosphere and at temperatures of more than 800°C.

WO 2004/063612 A2